

## **The Ecto-nox protein: Timely evidence for long range interactions in water?**

An enzyme is a protein that catalyses a chemical reaction. The Ecto-NOX protein is unusual in that it catalyses two different reactions, and alternates between them with a period of 24 minutes. James and Dorothy Morr  have been investigating the basis of this oscillation for over 30 years, and ten years ago they were surprised to find that water plays a key role in this oscillation. Their conclusion was that the oscillation is linked to changes in the proportion of the two spin isomers of the water molecules that surrounds the protein. More recent work by others casts doubt on this interpretation of the experimental results. An alternative interpretation will be presented where the oscillation is linked to a long range quantum interaction between the water molecules. The results of the Morr s' investigations into the Ecto-NOX oscillation appear to be consistent with an interaction between water molecules that is associated with the spins of the protons that form the nucleus of the hydrogen atoms.

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